National Estuarine Research Reserve System

Kachemak Bay Research Reserve

Science Collaborative

September 21st, 2011

Core Intended User Meeting

Agenda

9:00-9:30 am

- Introductions
- Review of June 21st notes
- Project Updates – Jeff, Steve, Angie, Kenny

9:30-10:30 am

- CIU Highlight: Rick Thompson, DNR
- Discussion
- Feedback, questions, other?

June 21st CIU mtg

CIU Highlight: Bryan Hawkins

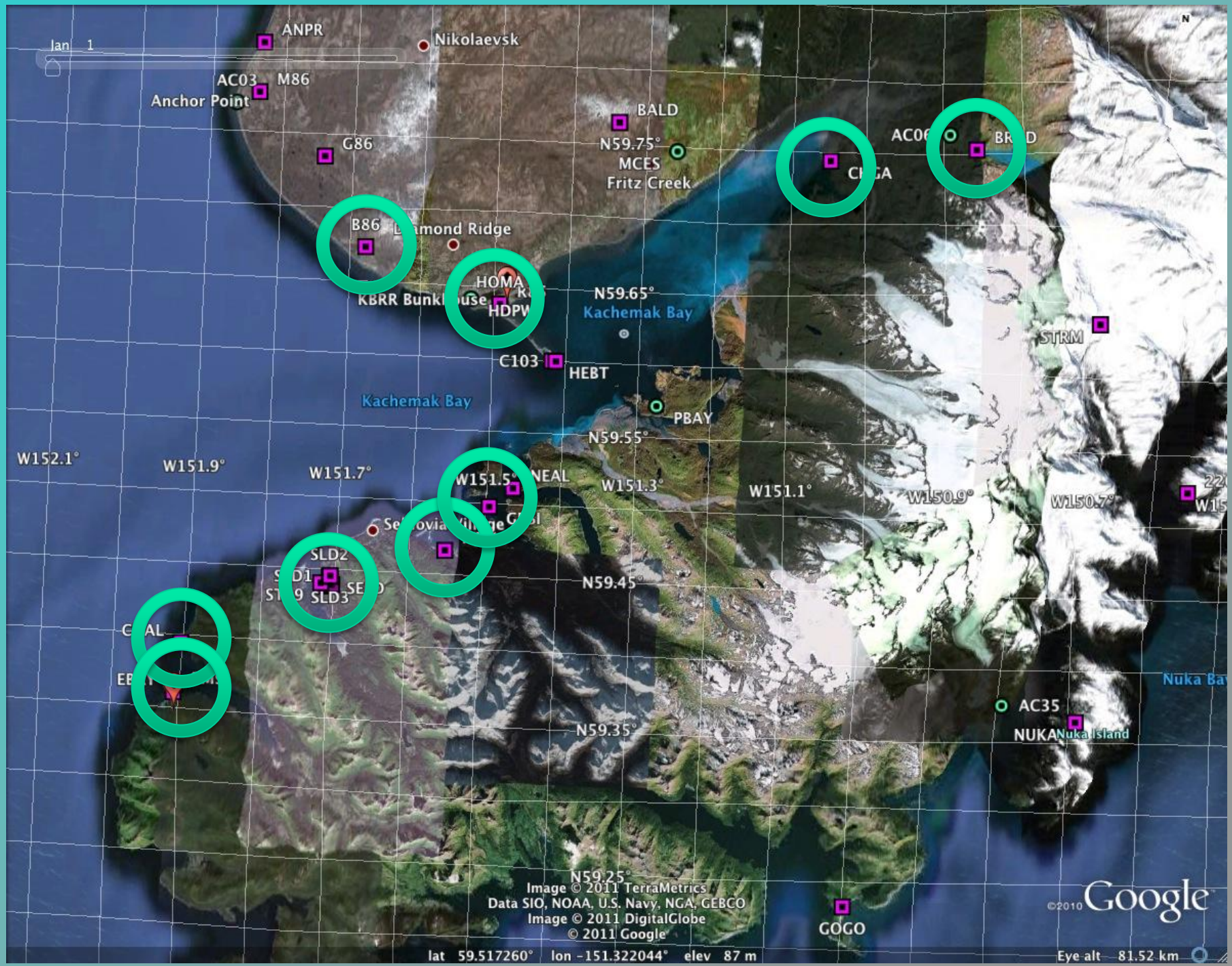
- Sediment transport along Spit and the challenges of maintaining the Homer Harbor

UNH Progress Report on all SC Projects

- Feedback from group supports that this project tracking fairly well
- Power of data vs. Human Dimensions: the dichotomy between science and local knowledge and those who have to make a decision between opposing or differing interpretations of the data

Summer 2011 Measurements

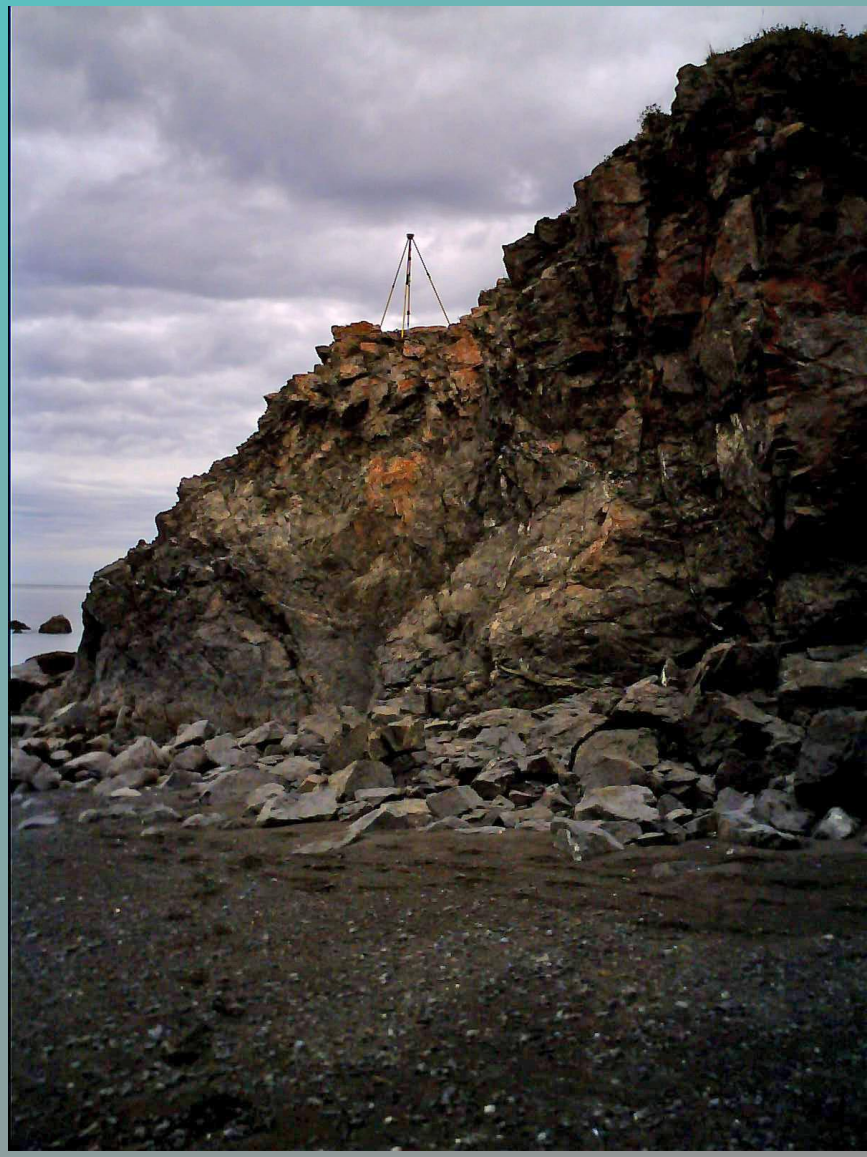
Summer 2011 Measurements

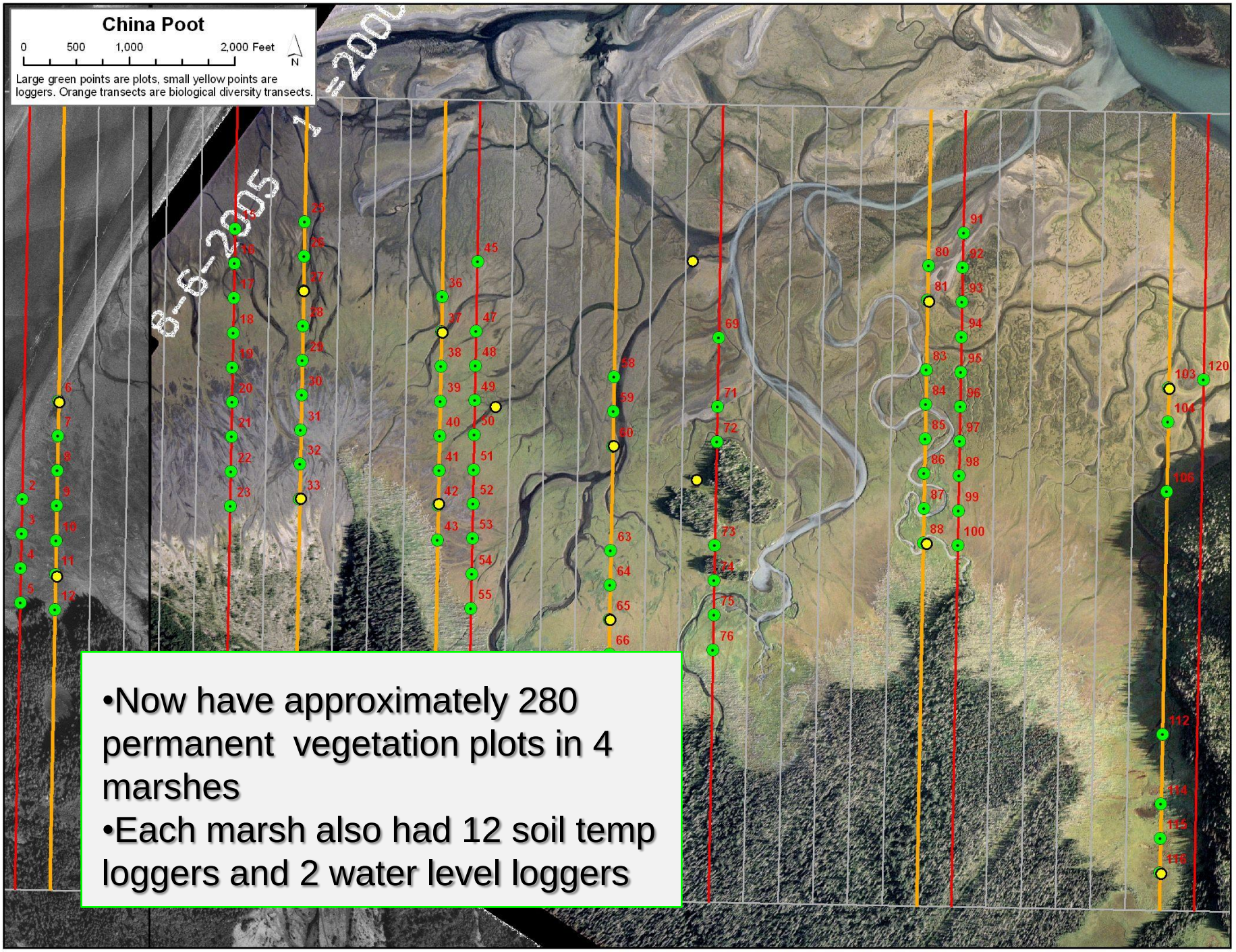

Jan 1
ANPR
Nikolaevsk
AC03
M86
Anchor Point
G86
BALD
N59.75°
MCES
Fritz Creek
B86
Diamond Ridge
HOMA
HDPW
KBRR
N59.65°
Kachemak Bay
C103
HEBT
STRM
PBAY
N59.55°
W152.1°
W151.9°
W151.7°
W151.5°
W151.3°
W151.1°
W150.9°
W150.7°
SLD2
SLD1
SLD3
N59.45°
AC35
NUKA
Nuka Island
N59.35°
N59.25°
GOGO
Image © 2011 TerraMetrics
Data SIO, NOAA, U.S. Navy, NGA, GEBCO
Image © 2011 DigitalGlobe
© 2011 Google
©2010 Google
lat 59.517260° lon -151.322044° elev 87 m
Eye alt 81.52 km

Initial Results

- Preliminary solutions for Sep. 2011 surveys are done
- Uplift rates look nearly uniform across the Bay
  - Probably vary by no more than 20-30%
- Mean uplift rate for pre-existing sites is close to 0.4 inch/year (10 mm/yr)
- Some new sites installed and surveyed: COAL, KASI, Chugachik, more from KBRR surveys

- Vertically-stable benchmarks
  - 5 new- 4 still to be done
  - Collected GPS data on those and others




China Poot
0 500 1,000 2,000 Feet
N
Large green points are plots, small yellow points are loggers. Orange transects are biological diversity transects.
6-6-2005
1 2 3 4 5 6 7 8 9 10 11 12
13 14 15 16 17 18 19 20 21 22 23
24 25 26 27 28 29 30 31 32 33
34 35 36 37 38 39 40 41 42 43
44 45 46 47 48 49 50 51 52 53 54 55
56 57 58 59 60 61 62 63 64 65 66
67 68 69 70 71 72 73 74 75 76
77 78 79 80 81 82 83 84 85 86 87 88
89 90 91 92 93 94 95 96 97 98 99 100
101 102 103 104 105 106 107 108 109 110 111 112
113 114 115 116 117 118 119 120
•Now have approximately 280 permanent vegetation plots in 4 marshes
•Each marsh also had 12 soil temp loggers and 2 water level loggers

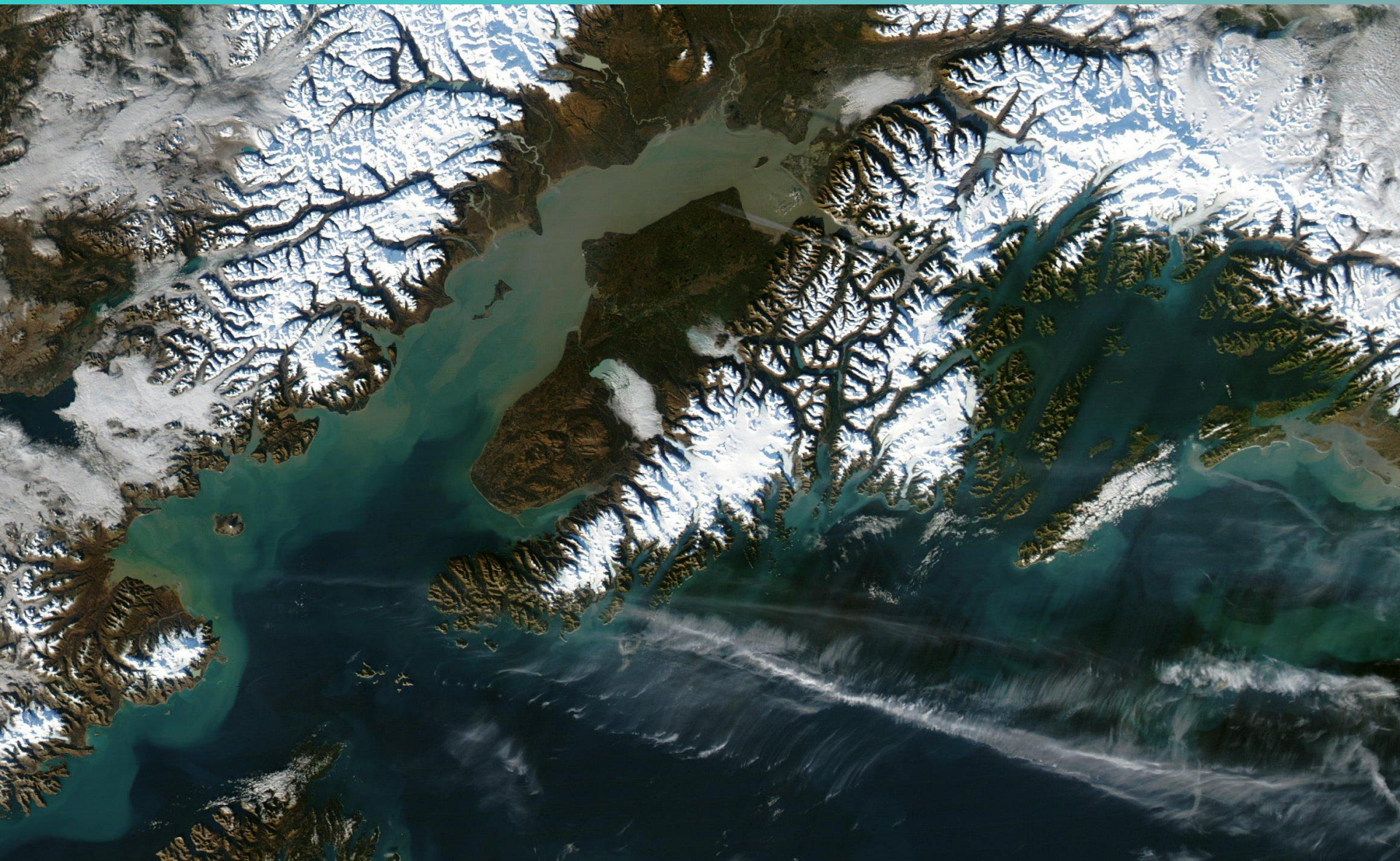
- Vegetation monitoring
  - Collected data on all 280 plots
  - Half of those now have two years

What Does Biological Diversity Have To Do With All Of This?

- Fresh Water: influence on surface circulation patterns
- The Alaska Marine Highway: plankton and larval transport systems
- Glacial Inputs to Salt Marshes: sediment, nutrients, temperature, and the contribution to the local ecology

National Estuarine Research Reserve System

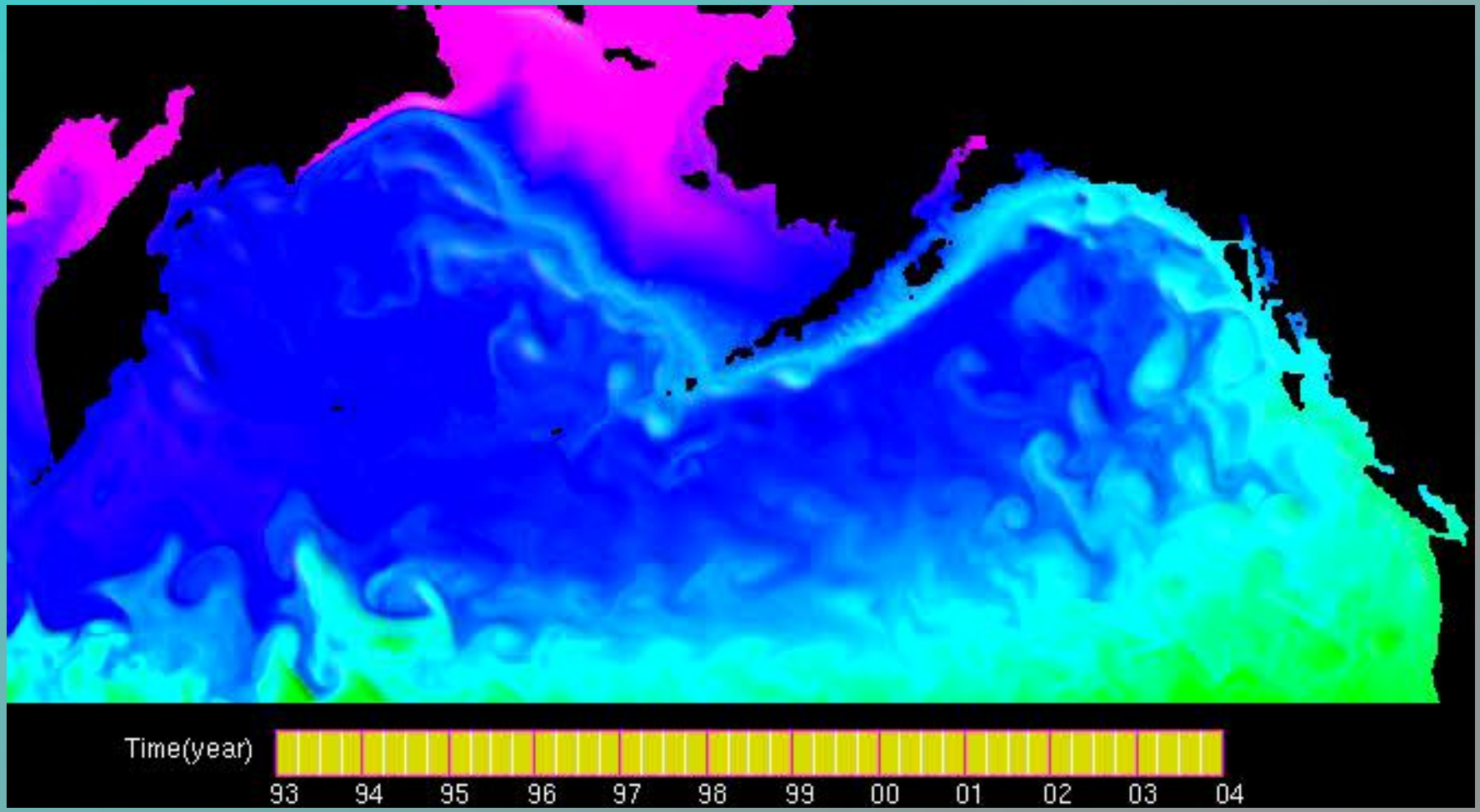
Kachemak Bay
Research Reserve



National Estuarine Research Reserve System

Kachemak Bay Research Reserve

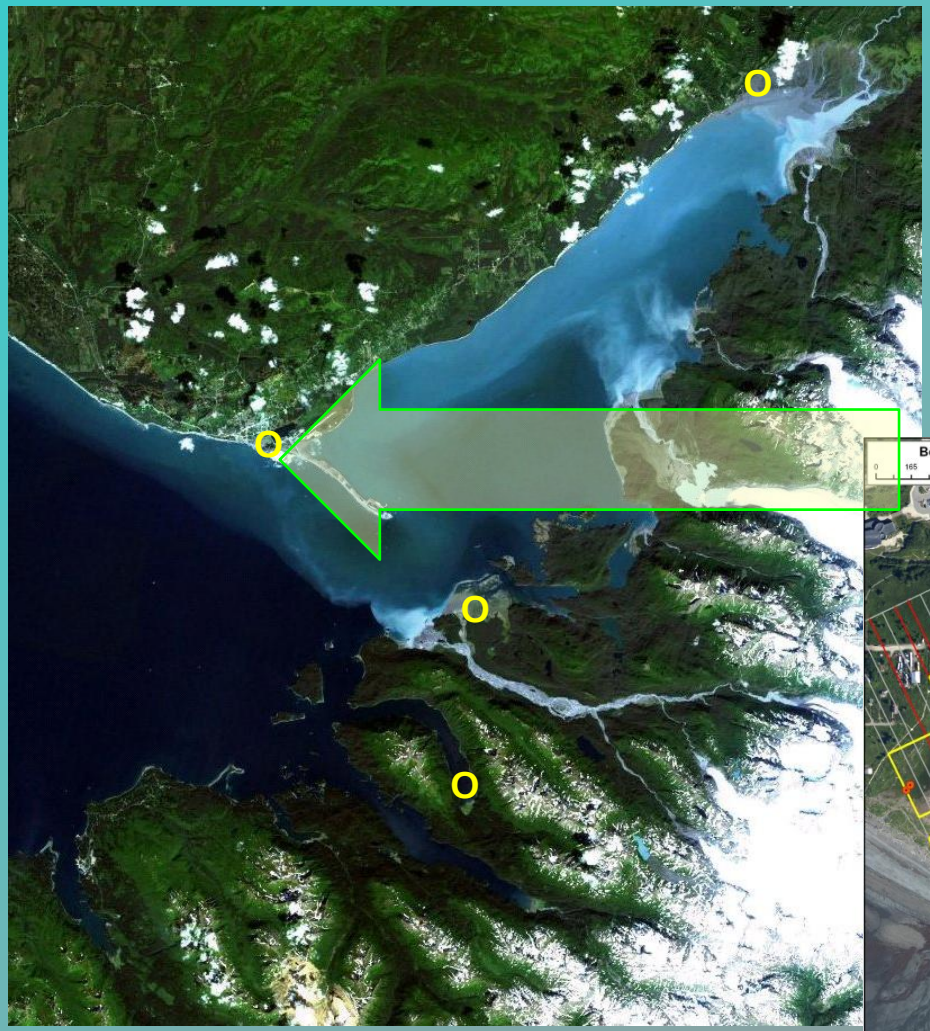
Large Scale Modeling of Sea Surface Temperatures over Time. This model was developed by Yi Chao, JPL



Citizen Science as a Tool for Assessing Biological Diversity (n=18)

- Training on Methods
- Data Used for:
  - Refining vegetation maps
  - Documenting biological diversity

Sites & Sampling



Each Site

144 additional vegetation plots
12 Insect Fallout Traps
12 Insect Sweeps
12 Samples for Infaunal Invertebrates
Fish Sampling (tidal & fresh water)
Bird and Mammal Species Lists

Next Steps…

- Data entry and processing
- Review and update Citizen Science training and communications
- Planning for next Fall ~ Fox River Flats and Sadie Cove sites

Beluga Slough Vegetation (8/13/2011)		
Alaskan Orache	Nootka Alkaligrass	Sandsperry
Beach Pea	Oysterleaf	Seaside Arrowgrass
Bluegrass	Pacific Silverweed	Seaside Ragwort
Common Yarrow	Pringle's bluegrass	Seaside Sandplant
Creeping Alkaligrass	Pursh Seepweed	Western Touch-Me-Not
Dandelion	Ramensk's Sedge	Gmelin's Saltbush (Orache)
Disc Mayweed	Red Fescue	Goose Tongue
Dunegrass	Rough Bentgrass	Horsetail
Glasswort	Saltmarsh Starwort	Lyngbye's Sedge
Mare's Tail	Marsh Willowherb	

Community Monitors

- Engaging Homer community

- Compile richer biological data

- Provide validity to usefulness of the gained knowledge

"Citizen Science in Our Salt Marshes" Discover Lab

- Tool to provide an overview of the Science Collaborative project as well as to recruit future community monitors
- 320 Visitors over the three sessions

Salt marsh monitoring training sessions

- Plant identification
- Community composition (percent coverage)
- Insect surveys
- Infaunal core use
- Animal Observations

Monitoring outings

– Beluga Slough & China Poot

Continued citizen scientist engagement

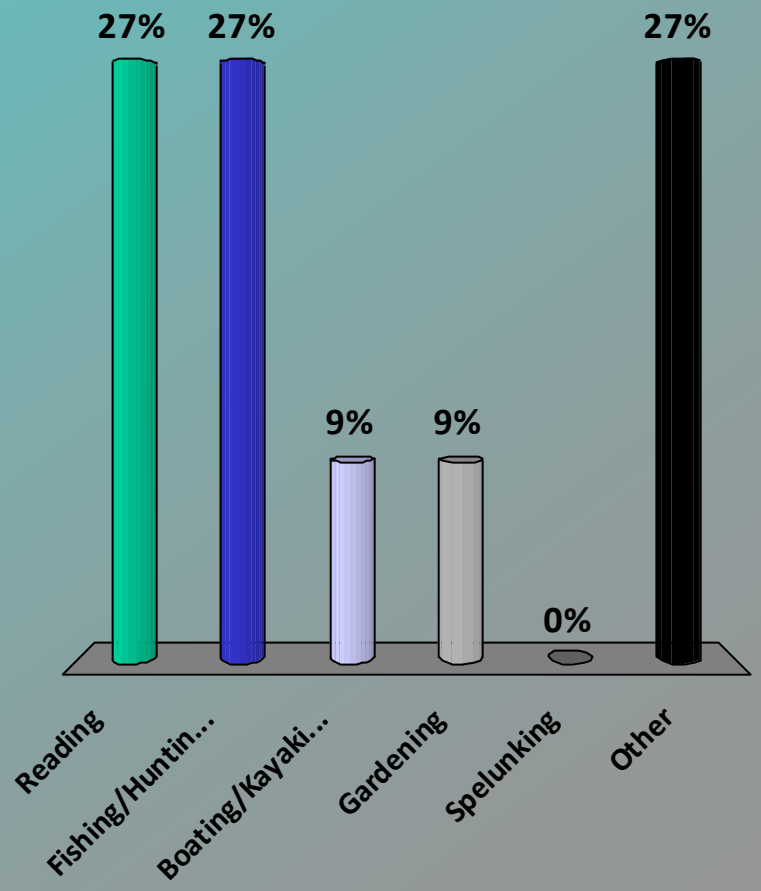
- Follow-up/appreciation packet including preliminary data report and links to further project information

- Sadie Cove and Fox River outings Summer ’12

Keypad Polling

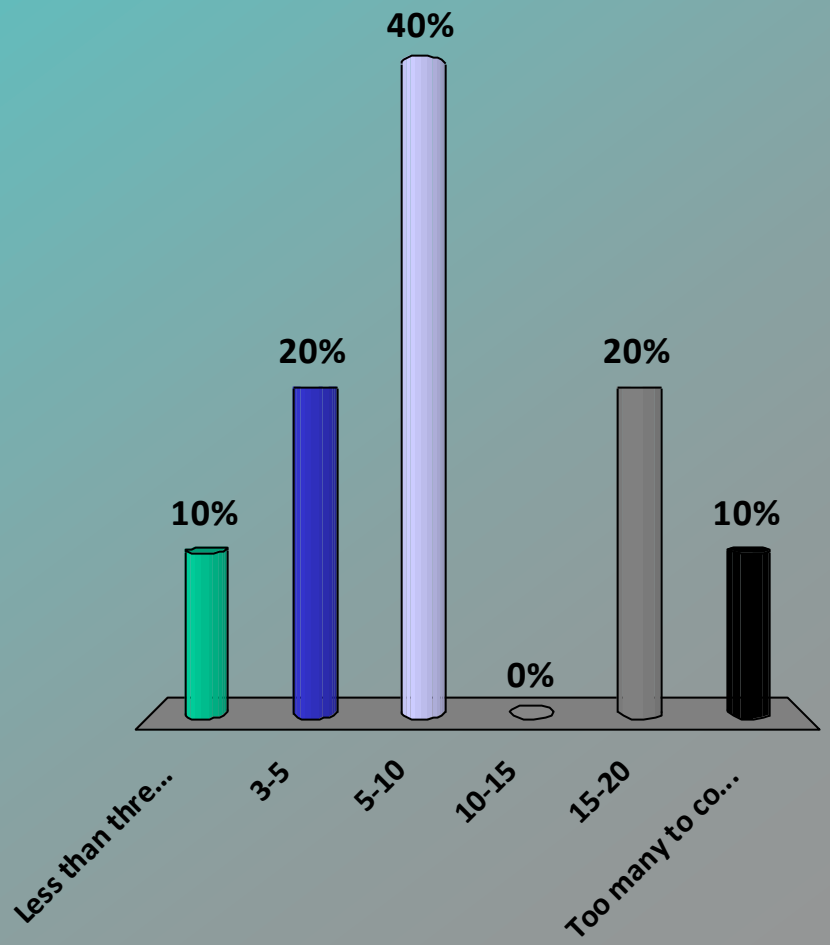
What is your favorite leisure time activity?

1. Reading
2. Fishing/Hunting
3. Boating/Kayaking
4. Gardening
5. Spelunking
6. Other



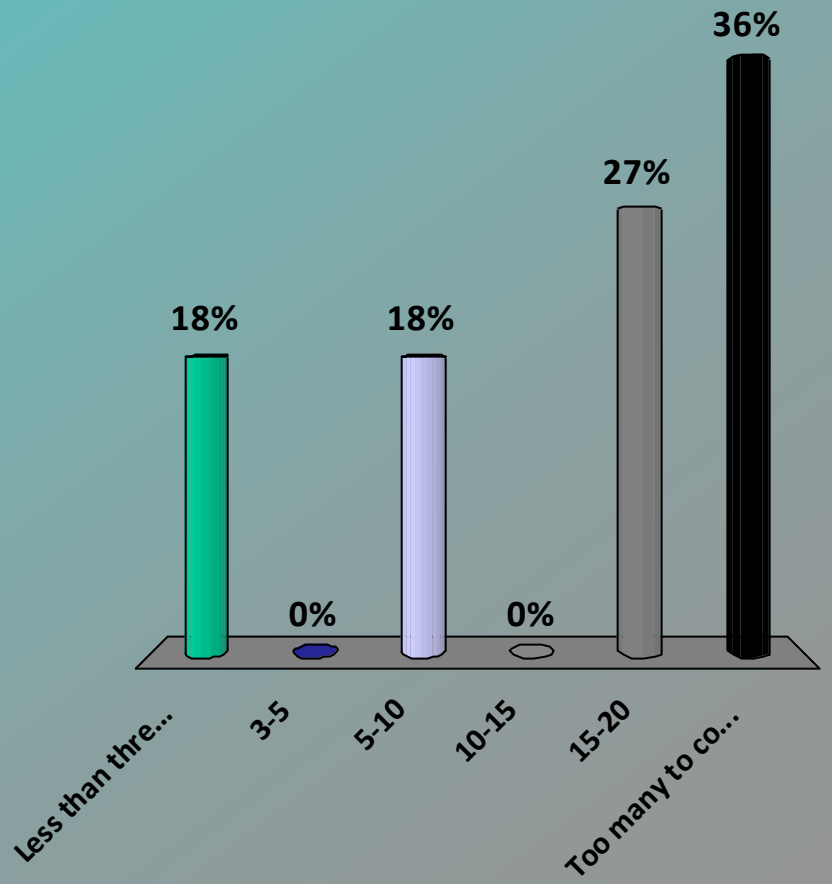
Number of Years in Your Current Position

1. Less than three
2. 3-5
3. 5-10
4. 10-15
5. 15-20
6. Too many to count



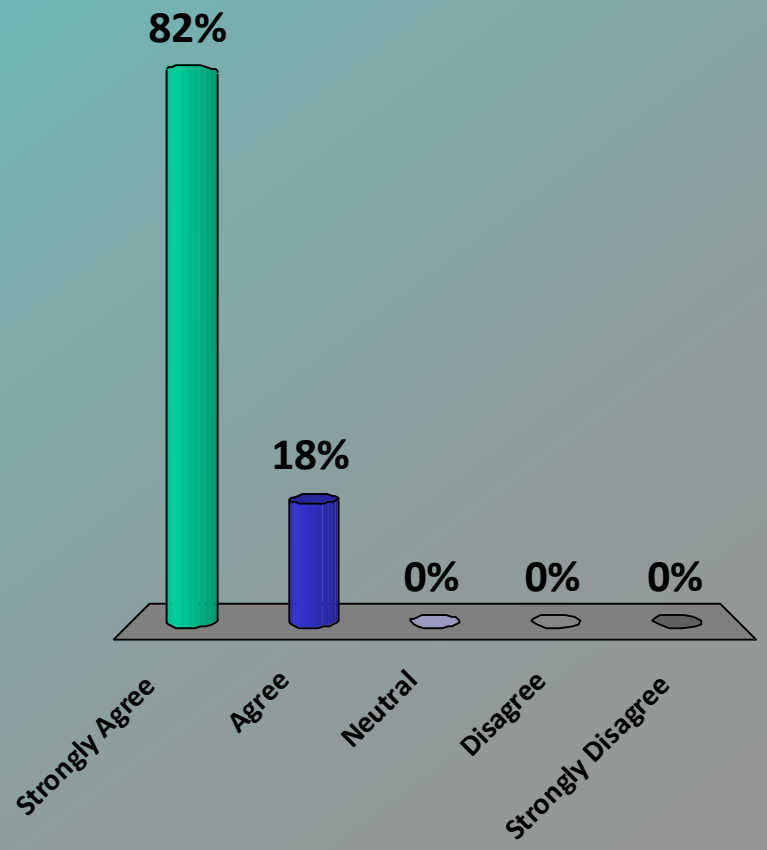
Number of Years You Have Done This Type of Work?

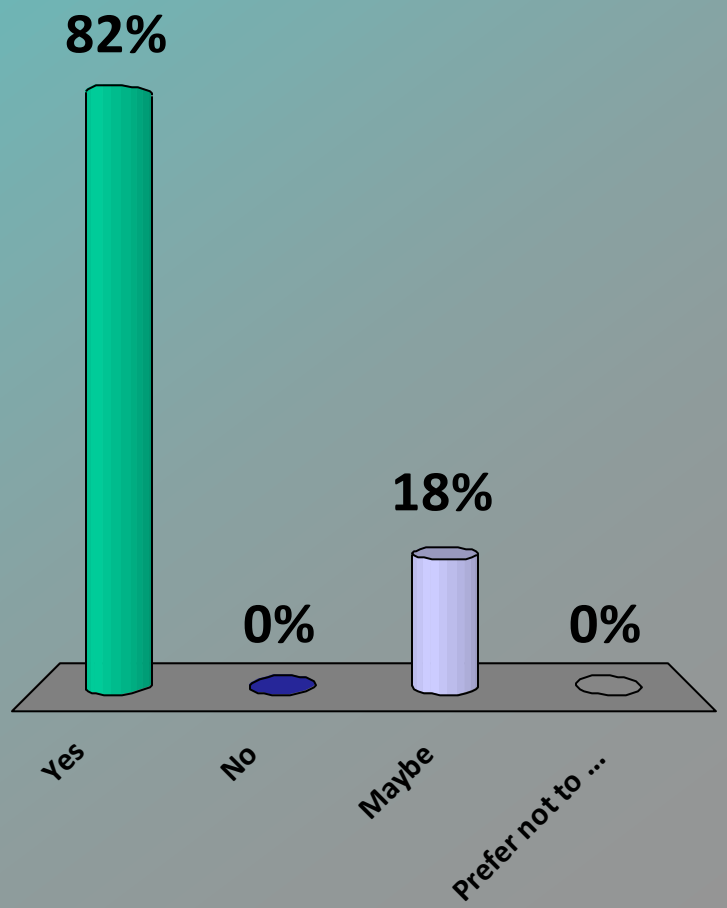
1. Less than three
2. 3-5
3. 5-10
4. 10-15
5. 15-20
6. Too many to count



Participating in this meeting was a good use of my time

1. Strongly Agree
2. Agree
3. Neutral
4. Disagree
5. Strongly Disagree



Did you learn something that you will apply in your work or future decisions?

1. Yes
2. No
3. Maybe
4. Prefer not to answer